## **ABSTRACT**

A method of optimizing a model of pipe network with respect to a predetermined criteria, such as costs. In particular, the method provides an efficient way of minimizing the cost of rehabilitating a water pipe network. The invention provides a method of optimizing proposals for pipes within a network without violating operating criteria of the network. The invention further provides the methods of determining the hydraulic significance of pipes within a pipe network, and determining the peak flow requirements of each pipe.